



United States

CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

CPSC/SECRETARY

10 FEB 13 P 2:25

MEMORANDUM

DATE: FEB 5 1998

TO : The Commission
Sadye E. Dunn, Secretary

Through : Jeffrey Bromme, General Counsel
Pamela Gilbert, Executive Director

FROM : Ronald L. Medford, Assistant Executive Director RLM
Hazard Identification and Reduction
Susan Ahmed, Director, Hazard Analysis Division (EHHA) SA
Directorate for Epidemiology and Health Sciences

SUBJECT: Update of All-Terrain Vehicle Deaths and Injuries.

The Consent Decrees require periodic updates of data on all-terrain vehicle deaths and injuries.

In response to this requirement, attached is the most recent update, using data available as of September 30, 1997.

Attachment

NOTE: This document has not been
reviewed or accepted by the Commission.
Initial rlh Date 2/5/98

CPSC 6 (b)(1) Cleared
X No Mfrs/PrvtLbrs or
Products Identified
Excepted by _____



United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: January 14, 1998

TO : Susan Ahmed, Director, EHHA
FROM : Jo-Annette David, EHHA *Jo-Annette David*
SUBJECT : Update of ATV Deaths and Injuries

Deaths Reported to the Commission

On September 30, 1997, the Commission had reports of 3,115 ATV-related deaths that occurred since 1982 (Table I). The reported deaths increased by 66 since the June 30, 1997 tabulation for the last update memorandum dated November 14, 1997.

Table I
Reported ATV-Related Deaths by Year
(January 1982 - September 1997)

Year	Number of Deaths	Difference Since Last Update (06/30/97)
Total	3,115	+66
1997	91	+52
1996	199	+12
1995	195	+01
1994	198	+01
1993	183	0
1992	221	0
1991	230	0
1990	234	0
1989	230	0
1988	250	0
1987	264	0
1986	299	0
1985	251	0
1984	156	0
1983	85	0
1982	29	0

Source: U.S. Consumer Product Safety Commission (CPSC),
Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

Table 2 is a listing of ATV-related deaths by state. The highest numbers of incidents were reported for California (213), Pennsylvania (183), New York (158), Michigan (157), and Texas (146).

Table 2

DEATHS ASSOCIATED WITH 3 AND 4-WHEEL ALL TERRAIN VEHICLES
REPORTED FOR THE PERIOD JAN '1, 1982 THROUGH SEPTEMBER 30, 1997

STATE	Frequency	Percent	Cumulative Frequency	Cumulative Percent
CALIFORNIA	213	6.8	213	6.8
PENNSYLVANIA	183	5.9	396	12.7
NEW YORK	158	5.1	554	17.8
MICHIGAN	157	5.0	711	22.8
TEXAS	146	4.7	857	27.5
FLORIDA	115	3.7	972	31.2
TENNESSEE	106	3.4	1078	34.6
WISCONSIN	103	3.3	1181	37.9
ARKANSAS	102	3.3	1283	41.2
WEST VIRGINIA	100	3.2	1383	44.4
MISSISSIPPI	91	2.9	1474	47.3
NORTH CAROLINA	91	2.9	1565	50.2
MINNESOTA	90	2.9	1655	53.1
KENTUCKY	86	2.8	1741	55.9
MISSOURI	81	2.6	1822	58.5
ARIZONA	79	2.5	1901	61.0
OHIO	78	2.5	1979	63.5
ALABAMA	77	2.5	2056	66.0
ALASKA	72	2.3	2128	68.3
GEORGIA	70	2.2	2198	70.6
LOUISIANA	66	2.1	2264	72.7
UTAH	59	1.9	2323	74.6
ILLINOIS	56	1.8	2379	76.4
VIRGINIA	56	1.8	2435	78.2
INDIANA	52	1.7	2487	79.8
OREGON	52	1.7	2539	81.5
MAINE	48	1.5	2587	83.0
IOWA	42	1.3	2629	84.4
KANSAS	42	1.3	2671	85.7
IDAHO	38	1.2	2709	87.0
NEW MEXICO	34	1.1	2743	88.1
OKLAHOMA	33	1.1	2776	89.1
WASHINGTON	33	1.1	2809	90.2
MASSACHUSETTS	31	1.0	2840	91.2
NEBRASKA	31	1.0	2871	92.2
COLORADO	30	1.0	2901	93.1
NEW HAMPSHIRE	29	0.9	2930	94.1
NEVADA	28	0.9	2958	95.0
NORTH DAKOTA	24	0.8	2982	95.7
VERMONT	22	0.7	3004	96.4
NEW JERSEY	21	0.7	3025	97.1
MONTANA	18	0.6	3043	97.7
SOUTH DAKOTA	17	0.5	3060	98.2
MARYLAND	14	0.4	3074	98.7
SOUTH CAROLINA	14	0.4	3088	99.1
CONNECTICUT	11	0.4	3099	99.5
WYOMING	6	0.2	3105	99.7
DELAWARE	3	0.1	3108	99.8
DISTRICT OF COLUMBIA	2	0.1	3110	99.8
HAWAII	2	0.1	3112	99.9
RHODE ISLAND	2	0.1	3114	100.0
PUERTO RICO	1	0.0	3115	100.0

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

Due to rounding, the numbers in the percent column may not add to exactly 100 percent.

Characteristics of **ATVs** and Fatalities

A review of the fatalities indicated that 1,118 victims (36% of the 3,115 total) were under 16 years of age and 482 victims (15% of the total) were under 12 years of age.

Four-wheel ATVs were involved in about 80 percent of the fatalities reported for 1997, 1996 and 1995; 70 percent of those reported for 1994, 1993 and 1992; 60 percent for 1991, 1990, and 1989; 53 percent for 1988; 45 percent for 1987; 28 percent for 1986; 19 percent for 1985; and 7 percent or less for prior years.

Estimated ATV-Related Deaths from 1985 to 1996

The deaths reported to the Commission represent a minimum count of ATV-related deaths. To account for deaths not reported to the Commission, estimates of the annual deaths were calculated for 1985 through 1996 using a statistical approximation method. Table 3 shows the risk of death (per 10,000 4-wheel ATVs in use) by year from 1985 to 1996.

Table 3
Annual Estimates of 3- and 4-Wheel ATV-Related Deaths
and Risk of Death for 4-Wheel **ATVs**
(As of September 30, 1997)

Year	Number of Deaths			Risk of Death (per 10,000 4-wheel ATVs in use) ^{3/}
	Total Reported	Total Estimated ^{1/}	Estimates for 4-wheel ATV's ^{2/}	
1996 ^{4/}	199	229	184	0.8
1995 ^{4/}	195	282	217	1.0
1994 ^{4/}	198	244	168	0.8
1993	183	211	144	0.7
1992	221	241	158	0.8
1991	230	255	152	0.8
1990	234	250	151	0.9
1989	230	258	153	0.9
1988	250	286	152	1.1
1987	264	282	126	1.1
1986	299	347	95	1.3
1985	251	295	55	1.5

Source: Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

^{1/}The procedure for estimating ATV-related deaths has two parts. For public road fatalities, the count was the number of reports received. For incidents occurring on terrain other than public roads, the Capture-Recapture Method was used to estimate deaths by matching and determining the overlap between the CPSC Death Certificate and Injury or Potential Injury Incident Data Bases (reports from newspapers, consumers, lawyers, etc.). The two parts were combined for the annual estimate of deaths. These estimates may change as additional reports are received.

^{2/}The estimated number of deaths associated with four-wheel ATVs was obtained by first dividing the reported number of deaths for four-wheel ATVs by the combined reported number of deaths for three- and four-wheel ATVs, then multiplying this quotient by the estimated number of deaths for all ATVs (three wheels, four wheels, and unknown number of wheels).

^{3/}The number of ATVs in use is based on ATV sales and operability rates data provided by industry. Because reliable operability rates data are not available for three-wheel ATVs, risk of death is shown only for four-wheel ATVs.

^{4/}Reporting may not be complete.

Estimated Hospital Emergency Room-Treated Injuries

Table 4 shows estimates of 3- and 4- wheel ATV-related injuries treated in hospital emergency rooms nationwide between January 1, 1982 and September 30, 1997. Children under age 16 years accounted for about 40 percent of the total of estimated injuries from January 1, 1985 through September 30, 1997.

Table 4
Annual Estimates of ATV Hospital Emergency Room-Treated Injuries
All Ages and Ages Less Than 16 years
(January **1982-September** 1997)

Adjusted Annual Injury Estimates ^{1/}		
Year	All Ages	Age < 16 Years
1997 ^{2/} (Through 9/30/97)	43, 800	17, 900
1996^{2/}	63, 400	23, 900
1995^{2/}	61, 700	22, 800
1994^{2/}	59, 200	25, 000
1993^{2/}	56, 700	20, 400
1992^{2/}	65, 200	24, 700
1991 ^{2/}	64, 000	24, 800
1990^{2/}	64, 500	24, 300
1989^{3/}	74, 900	27, 400
1988^{2/}	78, 200	29, 900
1987^{2/}	96, 600	39, 800
1986^{2/}	107, 700	48, 400
1985^{2/4/}	105, 700	42, 700
1984^{4/}	77, 900	<u>5/</u>
1983^{4/}	32, 100	<u>5/</u>
1982^{4/}	10, 100	<u>5/</u>

Source: U.S. Consumer Product Safety Commission, (CPSC)
Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (EHHA)

^{1/}Estimates for all years reflect the revised 1990 NEISS sample that improves reporting for ATV-related incidents.

^{2/}Estimates adjusted by factors to account for out of scope (non-ATV) cases based on injury surveys in 1985 and 1989. The adjustment factors were 0.93 for 1985-1988 and 0.95 for 1990 onward.

^{3/}Annual estimate for 1989 is based on the 1989 Injury Survey.

^{4/}Estimates adjusted due to revisions in the NEISS Coding Manual in March 1985. Estimates for 1982 through 1985 were adjusted based on a review of NEISS comments to exclude dune buggies and identify ATVs classified as minibikes or trail bikes.

^{5/}Adjusted estimates for children under 16 years old were not computed prior to 1985.

Table 5 shows four-wheel ATV-related injury and risk of injury estimates for January 1, 1985 through December 31, 1996.

Table 5
Annual Injury and Risk of Injury Estimates
Associated With 4-Wheel **ATVs**
January **1985-December** 1996

Year	Injury Estimate ^{1/2/}	Risk Estimate ^{3/}
1996	48,000	214.2
1995	42,900	203.4
1994	38,800	192.7
1993	36,500	188.1
1992	37,000	196.2
1991	37,900	207.2
1990	33,400	189.8
1989 ^{4/}	38,000	224.5
1988	41,300	289.1
1987	34,900	315.0
1986	23,800	324.2
1985	14,700	391.1

Source: U.S. Consumer Product Safety Commission (CPSC), Directorate for Epidemiology and Health Sciences, Division of Hazard Analysis (**EHHA**), National Electronic Injury Surveillance System (**NEISS**), and the Directorate for Economic Analysis (EC), Washington, DC (January 1, 1985 through December 31, 1996).

1/Annual Estimates are adjusted by factors to account for out of scope cases. Adjustment factors are .93 for 1985 through 1988, and .95 from 1990 on.

2/Occupation-related cases are not included.

3/Risk calculations are per 10,000 **ATVs** in use. Calculations are based on January 1997 ATV use tables developed by CPSC's Directorate for Economic Analysis, from sales and operability rates data provided by industry. Because reliable operability rates data are not available for three-wheel **ATVs**, risk of injury is given for four-wheel **ATVs** only.

4/Estimates for 1989 are based on the 1989 CPSC Injury Survey.